

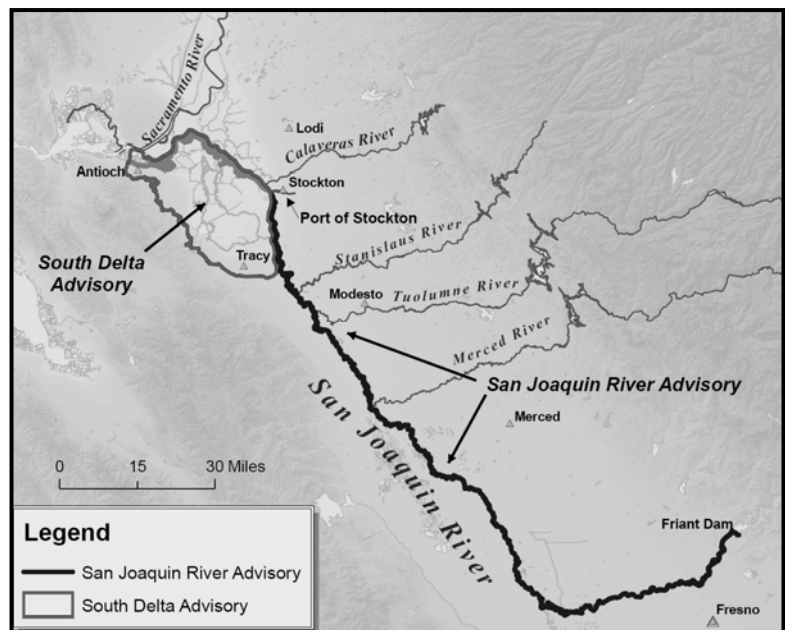
DRAFT SAFE EATING GUIDELINES for fish from the San Joaquin River and South Delta

Why has OEHHA developed draft “Safe Eating Guidelines” for fish from the San Joaquin River and South Delta?

Studies of mercury levels in fish and shellfish from water bodies in the San Joaquin Valley have shown that many fish and shellfish from this area are low in mercury and can be eaten often as part of a healthy diet. A few fish species, including bass, contain higher mercury levels and in some cases, should not be eaten. These findings are the result of the Fish Mercury Project, a large study funded by the California Bay-Delta Authority, which in 2005 tested fish from San Joaquin Valley water bodies for mercury. Other fish studies were conducted in past years by the State Water Resources Control Board, the CALFED Mercury Project, and the University of California, Davis. The data from these studies support the fish consumption recommendations in this fact sheet.

The Office of Environmental Health Hazard Assessment (OEHHA) is responsible for providing fish consumption guidelines for sport fish in California. OEHHA used the studies above to evaluate the health effects of eating fish and shellfish from this area. OEHHA has issued a draft report with safe eating guidelines for each of two large regions in the San Joaquin Valley in Contra Costa, San Joaquin, Stanislaus, Merced, Madera, and Fresno counties:

- The “**South Delta**,” including the San Joaquin River from the Sacramento River to the Port of Stockton; and all other rivers, sloughs, and flooded tracts in the Delta, south of the San Joaquin River
- The **San Joaquin River** south of the Port of Stockton to Friant Dam (near Fresno)



“Safe eating guidelines” provide information to fish consumers to help them choose the safest fish to eat. The guidelines also recommend how often these fish can be eaten for the greatest health benefits and minimum risk to health. The safe eating guidelines include tables that identify “Best Choices” and “Good Choices” for fish and shellfish containing *low* levels of mercury. OEHHA recommends that you choose these fish to eat, and *avoid* eating fish that are *high* in mercury.

One set of guidelines applies to women of childbearing age and children age 17 years and younger, who are particularly sensitive to methylmercury (the most prevalent form of mercury in fish). A second set applies to women beyond their childbearing years and men.

Why are mercury levels higher in some fish than in others?

Some of the major sources of mercury in the environment are volcanoes and coal-burning power plants, which discharge mercury into the air. Mercury in air can be carried worldwide before being deposited into oceans, lakes, and other water bodies. Runoff from old mercury mines or gold mining regions (where mercury was used in the gold recovery process) also releases mercury into waterways. Mercury accumulates in the bottom sediments of water bodies, where bacteria change mercury into a more toxic form known as “methylmercury” that fish take in from their diet. Methylmercury can build up in fish to levels that are many thousands of times greater than mercury levels in the surrounding water.

Fish from some areas may have higher mercury levels than fish from other locations. Also, fish that mostly eat other fish, such as bass, tend to have the highest mercury levels. In the San Joaquin River, for example, bass were found to have higher levels of mercury than other fish and shellfish species. Other types of fish, such as trout and sunfish, feed more on insects and other small aquatic animals in the water, and tend to have lower mercury levels. In the San Joaquin River and South Delta, sunfish, including bluegill, had some of the lowest mercury levels. Larger, older fish of a species usually accumulate higher levels of mercury than smaller fish from the same species and water body. For this reason, it is better to eat smaller fish of a species, provided they are legal size.

Many lakes in northern California have advisories for fish with high mercury levels. Most fish species from the San Joaquin River and South Delta, however, were found to be low in mercury and are therefore recommended for more frequent consumption. See the Safe Eating Guideline tables that follow for more information on which types of fish can be eaten frequently and which fish to avoid.

Many types of fish from the San Joaquin River and South Delta are low in mercury.

Why should fish be eaten if they might contain mercury or other chemical contaminants?

Fish are a nutritious source of protein and heart-healthy fats. That is why the American Heart Association recommends that healthy adults eat at least two 3-ounce servings (four ounces prior to cooking) of fish each week. To benefit most from fish consumption and avoid health risks from contaminated fish, it is important to eat fish that are low in contaminants and high in “good fats” – known as “omega-3 fatty acids.”

Many types of fish and shellfish from the San Joaquin River and South Delta are low in mercury. You can continue to enjoy eating many fish and shellfish from the San Joaquin River and South Delta, and the Safe Eating Guidelines can help you make informed choices.

What are the human health effects from eating fish with methylmercury?

Methylmercury can affect your health if you are exposed to excessive amounts over time. Developing fetuses and children are especially sensitive to methylmercury. Pregnant women can pass methylmercury to their babies through the placenta. Too much methylmercury can affect the nervous system in children, leading to subtle decreases in learning ability, language skills, attention, and memory. These effects may occur through adolescence as the nervous system continues to develop. For these reasons, a more conservative set of fish consumption guidelines applies to women of childbearing age and children 17 years and younger.

Women of childbearing age and children age 17 years and younger should carefully follow guidelines for eating fish.

In adults, the most subtle symptoms of methylmercury toxicity are numbness and tingling sensations in the hands and feet or around the mouth. The levels of methylmercury found in fish from the San Joaquin River and South Delta should not result in the health effects described above if the proposed guidelines are followed.

Do commercial fish available from stores and in restaurants contain methylmercury?

Most ocean and freshwater fish contain some level of mercury, so consider your total fish consumption when making choices about how much and which types of fish to eat. The federal government advises women of childbearing age and children aged 17 years and younger not to eat shark, swordfish, king mackerel, or tilefish, because these ocean species tend to have very high mercury levels. They also say that women of childbearing age and children can safely eat up to 12 ounces a week of a variety of other commercial fish. But if they eat sport fish from local water bodies in the same time period, they should choose fish from “Best Choices” and substitute that for one meal of commercial fish.

What about fish caught from other nearby locations?

The Fish Mercury Project is also studying the North Delta and Sacramento River; safe eating guidelines will be developed in the future for fish from that area. There is currently a draft advisory in place for fish and shellfish from the Lower Cosumnes and Lower Mokelumne Rivers. You can use OEHHA’s contact information and web site provided in this fact sheet to get more information.

Are there other chemical contaminants in these fish?

Data for pesticides and PCBs, although somewhat limited, did not show levels of concern in fish and shellfish from this region except for the Port of Stockton area. OEHHA recommends you follow the “No Consumption” warnings where signs are posted in the Port of Stockton area.

What are the next steps in OEHHA’s evaluation?

Future studies by the Fish Mercury Project will provide more information on other fish species in the Delta, including striped bass and sturgeon. Until then, all consumers should follow the restricted guidelines for these two fish species. See the Safe Eating Guidelines tables for details. Further studies of pesticides and PCBs are also planned to make sure they do not pose a health risk.

OEHHA is seeking public comment on the Safe Eating Guidelines for the San Joaquin River and South Delta and the draft report that describes how they were developed. Written comments can be sent directly to Dr. Margy Gassel at OEHHA’s address below until April 23, 2007. OEHHA will review all comments before issuing a final report and consumption guidelines. OEHHA staff scientists will also make a presentation and answer questions about draft safe eating guidelines at a public workshop and training at 9:30 a.m. on March 20, 2007, at the County of San Joaquin Public Health Services office at 1601 E. Hazelton Avenue in Stockton.

Where can I get more information?

For information on mercury and other contaminants in sport fish in California, or to submit comments, contact:

Office of Environmental Health Hazard Assessment (OEHHA)
1515 Clay Street, 16th Floor
Oakland, California 94612
Telephone (510) 622-3170 FAX (510) 622-3218
Or visit the OEHHA Web site at: <http://www.oehha.ca.gov> (Click on “Fish”)

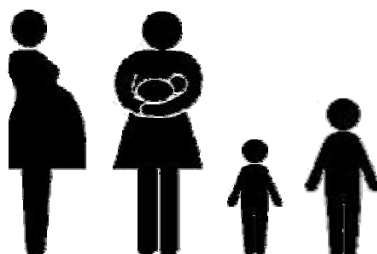
For information on mercury in commercial fish, contact:

U.S. Food and Drug Administration
Center for Food Safety and Applied Nutrition
1 (888) SAFEFOOD or <http://www.cfsan.fda.gov/~dms/admehg3.html>

For information on the Fish Mercury Project, visit: <http://www.sfei.org/cmr/fishmercury/>

SAFE EATING GUIDELINES

**For Women of Childbearing Age,
Pregnant and Breastfeeding Women, and
Children 17 Years and Younger**



BASED ON MERCURY IN FISH FROM THE
SOUTH DELTA
INCLUDING THE SAN JOAQUIN RIVER
FROM THE SACRAMENTO RIVER TO THE PORT OF STOCKTON,
AND ALL RIVERS, SLOUGHS, AND FLOODED TRACTS IN THE DELTA
SOUTH OF THE SAN JOAQUIN RIVER

BEST CHOICES	
Eat up to 4 servings* a week (Total of 12 ounces cooked fish a week)	Bluegill or other sunfish, catfish, clams, or crayfish

OR

GOOD CHOICES	
Eat up to 2 servings* a week (Total of 6 ounces cooked fish a week)	Crappie; carp; sucker; largemouth, smallmouth, or spotted bass

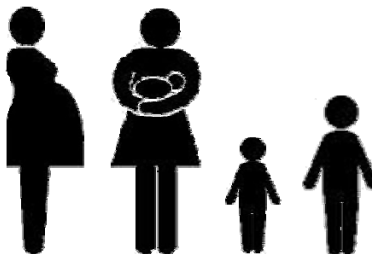
AVOID	
It is better for your health to eat fish from Best or Good Choices above	
No more than 2 servings* a month (Total of 6 ounces cooked fish a month)	Striped bass (18-27 inches) or sturgeon
Do Not Eat	Striped bass over 27 inches

Follow the “No Consumption” warnings where signs are posted for the Port of Stockton area

*** The recommended serving size for adults is three ounces of cooked fish
(four ounces prior to cooking)**

SAFE EATING GUIDELINES

For Women of Childbearing Age,
Pregnant and Breastfeeding Women, and
Children 17 Years and Younger



BASED ON MERCURY IN FISH FROM THE
SAN JOAQUIN RIVER
FROM THE PORT OF STOCKTON
TO FRIANT DAM

BEST CHOICES	
Eat up to 4 servings* a week (Total of 12 ounces cooked fish a week)	Bluegill and other sunfish, or crayfish
OR	
GOOD CHOICES	
Eat up to 2 servings* a week (Total of 6 ounces cooked fish a week)	Catfish, crappie, carp, or sucker
AVOID	
Do Not Eat	Largemouth, smallmouth, or spotted bass

Follow the “No Consumption” warnings where signs are posted for the Port of Stockton area

* The recommended serving size for adults is three ounces of cooked fish
(four ounces prior to cooking)

SAFE EATING GUIDELINES

For Women Beyond Childbearing Age and Men



BASED ON MERCURY IN FISH FROM THE
SOUTH DELTA
 INCLUDING THE SAN JOAQUIN RIVER
 FROM THE SACRAMENTO RIVER TO THE PORT OF STOCKTON,
 AND ALL RIVERS, SLOUGHS, AND FLOODED TRACTS IN THE DELTA
 SOUTH OF THE SAN JOAQUIN RIVER

BEST CHOICES	
Daily (Total of 21 ounces cooked fish a week)	Bluegill or other sunfish
Eat up to 6 servings* a week (Total of 18 ounces cooked fish a week)	Clams, crayfish, crappie, or carp
Eat up to 4 servings* a week (Total of 12 ounces cooked fish a week)	Catfish; sucker; largemouth, smallmouth, or spotted bass

AVOID	
It is better for your health to eat fish from Best or Good Choices above	
No more than 4 servings* per month (Total of 12 ounces cooked fish a month)	Striped bass (18-35 inches) or sturgeon
Do Not Eat	Striped bass over 35 inches

Follow the “No Consumption” warnings where signs are posted for the Port of Stockton area

* The recommended serving size for adults is three ounces of cooked fish
 (four ounces prior to cooking)

SAFE EATING GUIDELINES

For Women Beyond Childbearing Age and Men



BASED ON MERCURY IN FISH FROM THE
SAN JOAQUIN RIVER
FROM THE PORT OF STOCKTON
TO FRIANT DAM

BEST CHOICES	
Daily (Total of 21 ounces cooked fish a week)	Bluegill or other sunfish
Eat up to 6 servings* a week (Total of 18 ounces cooked fish a week)	Crayfish, crappie, or carp
Eat up to 4 servings* a week (Total of 12 ounces cooked fish a week)	Catfish or sucker

OR

GOOD CHOICES	
Eat up to 2 servings* a week (Total of 6 ounces cooked fish a week)	Largemouth, smallmouth, or spotted bass

Follow the “No Consumption” warnings where signs are posted for the Port of Stockton area

*** The recommended serving size for adults is three ounces of cooked fish
(four ounces prior to cooking)**

ADDITIONAL GUIDELINES AND INFORMATION

Fish are nutritious and are recommended as part of a healthy, balanced diet. The American Heart Association advises healthy adults to eat at least two 3-ounce portions of cooked fish, preferable fatty fish, each week. It is important, however, to choose your fish wisely. OEHHA recommends that you choose fish to eat that are low in mercury and other contaminants. The recommended options are presented as “Good Choices” and “Best Choices.” When fish contain high levels of mercury or other chemicals, OEHHA recommends that you avoid eating these fish.

- **MEAL SIZE DEPENDS ON BODY WEIGHT.** The safe eating guidelines are based on a recommended serving size of three ounces of cooked fish or shellfish (four ounces prior to cooking) — about the size of a deck of cards. If you weigh less than the average (about 160 pounds), it is best to eat smaller servings. Serve smaller servings to children – about half as much as adults for children 12 and under.
- **CONSIDER THE FISH YOU BUY FROM STORES AND RESTAURANTS.** Women of childbearing age and children can safely eat up to 12 ounces a week of a variety of fish purchased in stores or restaurants, or use this guide for eating fish caught from the San Joaquin River and South Delta. Commercial fish such as shrimp, king crab, scallops, farmed catfish, wild ocean salmon, oysters, tilapia, flounder, and sole generally contain some of the lowest levels of mercury. Women of childbearing age and children should not eat shark, swordfish, king mackerel, or tilefish, which contain the most mercury.
- If you also eat fish that you buy from stores and restaurants during a week that you eat local sport fish, choose the local sport fish that you eat from “Best Choices.”
- **FISH FROM OTHER WATER BODIES MAY ALSO CONTAIN MERCURY.** Not all water bodies in California have been tested. With the exception of ocean or river-run salmon or steelhead, which may be consumed more frequently, you can eat up to two servings a week of fish caught from places currently without an advisory – one serving is three ounces of cooked fish (four ounces prior to cooking).